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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/369,941	08/06/1999	CHARLOTTE A. KENSIL	106941.181	7453

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EXAMINER
WILSON, MICHAEL C

ART UNIT	PAPER NUMBER
1632	21

DATE MAILED: 03/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/369,941	KENSIL, CHARLOTTE A.	
	Examiner	Art Unit	
	Michael Wilson	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-28,49-61 and 63-89* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-28,49-61 and 63-89* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 1632.

Applicant's arguments filed 1-18-02, paper number 20, have been fully considered but they are not persuasive. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restriction

New claims 84-89 encompass a non-elected invention: a composition comprising a protein or peptide and methods of using such a composition. It is unclear how the limitations of "polysaccharides," "lipids" and "nucleic acids" relate to the elected invention because they are not antigens as claimed. A complete reply to the final rejection must include cancellation of nonelected aspects of the invention in the claims (37 CFR 1.144) See MPEP § 821.01.

Claims 20-28, 49-61 and 63-89 are pending and under consideration in the instant application. The claims are being examined as they relate to a composition comprising saponin and an immunostimulatory nucleic acid sequence and a composition comprising saponin, an immunostimulatory nucleic acid sequence and DNA encoding an antigen and methods of using a composition comprising saponin, an immunostimulatory nucleic acid sequence and DNA encoding an antigen. Claims 19-32 and 49-89 are not being examined as they relate to a

composition comprising saponin, an immunostimulatory nucleic acid sequence and antigen or methods of using such a composition.

Specification

1. The amendment filed 1-18-02 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: changing "5-40" bases to "4-40" bases. Applicant is required to cancel the new matter in the reply to this Office action.

Claim Rejections - 35 USC § 112

2. Claims 73 and 74 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not disclose an immunostimulatory oligo that is 4-40 bases in length. Applicants cite page 8, which has been amended to include 4 bases in length, but such a limitation was not disclosed in the specification as originally filed.

3. Claims 49-62, 64, 67, 68, 70, 72, 74, 76, 77 and 79 remain rejected and claims 87-89 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of inducing an immune response in an individual comprising administering i) a vector

comprising a nucleic acid sequence encoding an antigen operatively linked to a promoter; and ii) a nucleic acid sequence comprising at least one unmethylated CpG to said individual such that an immune response against said antigen occurs in the individual, does not reasonably provide enablement for merely administering a saponin and a nucleic acid sequence comprising at least one unmethylated CpG without also administering a nucleic acid sequence encoding an antigen. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The specification does not enable merely administering saponin and an immunostimulatory oligonucleotide as claimed without a nucleic acid sequence encoding an antigen because the specification does not provide an enabled use for merely administering two adjuvants and because such a composition would induce a non-specific immune response. Applicants argue merely administering two adjuvants can be used to increase the immune response against an antigen administered at a different or at the same time. Applicants argument is not persuasive. The claims do not require administering antigen at the same time or at a different time. And if they did, such claims would not be examined because they would be directed toward a non-elected invention. The basis of the rejection is that administering two adjuvants as claimed without administering antigen or DNA encoding antigen is not enabled.

4. Claims 19-32 and 49-62 as newly amended are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "immunostimulatory oligonucleotide" (claims 19 and 49) is indefinite as it relates to "motif" (claims 27 and 57), and "a nucleic acid sequence encoding the protein or peptide" (claims 32 and 62). The metes and bounds of the composition encompassed by the claims cannot be determined. The specification defines an "immunostimulatory oligonucleotide comprising at least one unmethylated CpG motif" as an oligonucleotide that activates the immune system (page 8, line 9). The specification states the oligonucleotide may be 5-40 base pairs in length or part of a vector. However, the nucleic acid may only be 4 nucleotides in length according to claims 27 and 57. Furthermore, claims 32 and 62 state the composition may also have a nucleic acid sequence encoding an antigen or peptide. Is the nucleic acid sequence comprising a CpG motif not part of a vector? Does the nucleic acid sequence comprising a CpG motif encompass any nucleic acid sequence greater than 4 nucleotides in length or 5 nucleotides in length? Can the nucleic acid sequence comprising a CpG motif also encode an antigen as long as it is not part of a vector? Can the nucleic acid sequence encoding an antigen (claims 32 and 62) have CpG motifs? What are the metes and bounds of the nucleic acid sequences comprising a CpG motif being claimed? (Claims 20-32 and 49-62 are included as they depend upon claim 19).

Claims 84 and 87 are indefinite because the Markush group is improper because polysaccharides, lipids, glycolipids, phospholipids and nucleic acids are not antigens.

Claims 73 and 74 are indefinite because the size of the oligo is unclear. It is unclear of the oligo is from 4 to 40 bases or from 4-40 bases or greater. The word "from" is confusing.

Claims 73 and 74 are indefinite because it is unclear if "comprising at least one unmethylated CpG motif" refers to the 4-40 bases or to the oligo. The phrase "an immunostimulatory oligonucleotide comprising at least one unmethylated CpG motif, wherein said immunostimulatory oligonucleotide is 4-40 bases in length" would be more clear.

Claim Rejections - 35 USC § 102

5. Claims 65, 67 and 75-77 remain rejected under 35 U.S.C. 102(e) as being anticipated by Urban (Urban et al. US Patent 6,013,258, Jan 11, 2000) as supported by Krieg (Krieg et al., Tends in Microbiology, Jan. 1, 1998, Vol. 6, pages 23-26) for reasons of record.

Urban taught administering a plasmid comprising at least two unmethylated CpG nucleic acid sequence and an immunogenic HPV peptide and saponin (ISCOM) (col. 6, line 18). While not relied upon, the inherency of plasmid DNA having unmethylated CpG is supported by Krieg who taught that plasmid DNA is bacterial DNA that has unmethylated CpG (page 23, line 5; page 25, col. 1, p. 1 and 2). Saponin/Quil A is inherently derived from *Quillaja saponaria* and considered "substantially" pure because the term "substantially" is not defined in the specification and because saponin must be purified away from other compounds to be obtained. Thus, Urban anticipates the claims.

Applicants argue one of ordinary skill would understand that "modified" means the structure of the nucleotide or saponin has been altered. Applicants argument is not persuasive. The plasmid of Urban is an "immunostimulatory oligonucleotide" and has been "modified"

because it has been genetically altered. The saponin has been modified because it has been added to cholesterol. A "modified immunostimulatory oligonucleotide" in its broadest sense to one of ordinary skill in the art is not limited to modifying linkages or bases (page 9-10). Likewise, a "modified saponin" is not limited to a saponin conjugated to a protein, small molecule, etc.

6. Claims 65, 67 and 75-77 remain rejected under 35 U.S.C. 102(e) as being anticipated by Sasaki (Sasaki et al. US Patent 5,808,024, Sept. 15, 1998) as supported by (Krieg et al., Tends in Microbiology, Jan. 1, 1998, Vol. 6, pages 23-26) for reasons of record.

Sasaki taught the pBluescript II SK plasmid encoding an antigen (col. 18, lines 4-19; col. 11, lines 22-45) and combining such plasmids with QS21 (column 3, lines 36-63; see especially lines 39 and 63). pBluescript II SK inherently has at least one unmethylated CpG dinucleotide because plasmids are bacterial DNA which inherently has unmethylated CpG. While not relied upon, the inherency of plasmid DNA having unmethylated CpG is supported by Krieg who states that plasmid DNA is bacterial DNA that has unmethylated CpG (page 23, line 5; page 25, col. 1, p. 1 and 2). QS21 is derived from *Quillaja saponaria* and is "substantially" pure because the term "substantially" is not defined in the specification and because QS21 is a purified saponin.

Applicants arguments regarding Sasaki are the same as those regarding Urban and have been addressed above.

7. Claims 19-20, 24-27, 29-32, 49-50, 54-57, 59-62, 65-68, 73 and 74 remain rejected and claims 84-89, under 35 U.S.C. 102(e) as being anticipated by Agrawal (US Patent 5,968,909, Oct. 19, 1999) for reasons of record.

Agrawal taught a composition comprising a phosphorothoiated oligonucleotide comprising at least two unmethylated CpG nucleic acid sequences and saponin (col. 8, line 29; col. 17, line 27, SEQ ID NO:6; col. 6, line 29). Saponin is inherently derived from *Quillaja saponaria* (claims 20 and 50). Note the "TCGT" and TCGC" sequences within SEQ ID NO:6 which is equivalent to the formula in claims 27 and 57. The limitation of "lipid" (84, 85, 87, 88) is equivalent to saponin because Agrawal taught saponin was a lipid (col. 6, line 26-29). Agrawal also taught combining the oligos with phospholipids (claims 86 and 89; see col. 6, line 269). The phrase "for increasing the immune response to an antigen in an individual or a test system to which the antigen is administering" (claims 49, 67, 68, 74) is an intended use and does not bear patentable weight because it may not occur. As written, claims 49, 67, 68, 74 and those dependent therefrom merely require administering the composition. Thus, Agrawal anticipates the claims.

Applicants argue Agrawal does not teach composition claimed because the "oligonucleotide" of Agrawal is not "immunostimulatory" because it decreases the immune response. Applicants argument is not persuasive because the "oligonucleotides" are still "immunostimulatory" - just less so. Applicants argue the "saponin" of Agrawal is not described as being an "adjuvant." Applicants argue Agrawal teaches away from combining the oligo of Agrawal with a saponin adjuvant because the purpose of Agrawal is to decrease the immune response. Applicants arguments are not persuasive because the term "adjuvant" is not limited to stimulating the immune response; it can also mean "A pharmacological agent added to a drug to

increase or aid its effect" (http://www.bartleby.com/). Applicants point to Bomford which teaches different saponins have different ability to stimulate the immune system; however, the claims do not require that the saponin adjuvant stimulate the immune system.

Claim Rejections - 35 USC § 103

8. Claims 19-27, 49-57, 59-68, 73-77 remain rejected and claims 80-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiner (Weiner et al., Sept. 1997, PNAS, Vol. 94, pages 10833-10837) in view of Kensil (Kensil, 1996, Critical Reviews in Therapeutic Drug carrier Systems, Vol. 13, No. 1 and 2, pages 1-55) for reasons of record.

Weiner taught administering oligonucleotide 1643 increased the humoral immune response in a mouse (page 10834, col. 1). 1643 has three unmethylated CpG motifs (Table 1, page 10834). Note the "ACGC" "TCGA" and "TCGA" which are equivalent to the formula in claims 27 and 57. 1643 is phosphorothioated (page 10833, col. 2, 11 lines from the bottom) (claims 25, 26, 55, 56 and 65-68). Weiner does not teach combining 1643 with QS-7, -17, -18 or -21. However, at the time of filing, Kensil taught combining QS-7, -17, -18 or -21 with other adjuvants to increase the adjuvant effect (page 6, line and page 23). QS-7, -17, -18 and -21 are purified from saponin which is purified from *Quillaja saponaria* (page 3).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine oligonucleotide 1643 of Weiner with QS-7, -17, -18 or -21 as taught by Kensil. One of ordinary skill in the art at the time the invention was made would have

recognized that 1) both Weiner and Kensil are directed toward compositions with adjuvants that increased the humoral immune response and 2) 1643 and QS-7, -17, -18 or -21 could be combined because it was common for one of ordinary skill in the art at the time of filing to combine adjuvants to increase the humoral immune response. One of ordinary skill in the art at the time the invention was made would have been motivated to combine oligonucleotide 1643 and QS-7, -17, -18 or -21 to increase the humoral immune response.

Claims 80-84 are included because the composition taught by the combined teachings of Weiner and Kensil would cause an immune response. It is noted that the claims do not require administering an antigen and the phrase "when administered to an individual" is not limited to when an antigen is administered to an individual; it could also mean when the two adjuvants are administered to an individual. Overall, the phrase in claim 80 does not add a functional limitation that distinguishes the composition claimed from the composition of Weiner and Kensil. Claims 84, 85, 87, 88 are included because saponin is a lipid. Claims 84-89 are also included because of the indefiniteness of the claims.

Applicants argue Weiner suggests combining the oligos with other adjuvants but does not direct one of skill specifically to saponin. Therefore, applicants argue one of ordinary skill in the art at the time the invention was made would not have looked to the teachings of Kensil. Applicants argument is not persuasive. One of ordinary skill in the art of adjuvants at the time the invention was made would have known that saponin was an adjuvant. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the oligo

CpG of Weiner with the saponin of Kensil because they both were known to stimulate humoral immunity. Thus, motivation to combine the references is based upon more than just the statement of Weiner. It is also based on the knowledge of one of skill in the adjuvant art at the time of filing and the desire to improve humoral immunity. Applicants argue Weiner does not teach combinations of adjuvants will be better than either adjuvant alone. Applicants argument is not persuasive because the claims do not require the composition is a better adjuvant than either adjuvant alone. Applicants argue Kensil teaches combining saponin with other adjuvants but the "other adjuvants" described are not broad enough to include oligo CpGs. Applicants argument is not persuasive because Kensil does not teach oligo CpG cannot be combined with saponin or teach away from combining oligo CpGs and saponin. It cannot be determined why applicants believe one of ordinary skill would not have a reasonable expectation of success in adding oligo CpGs to saponin. Applicants argue the combination of adjuvants taught by Kensil did not increase adjuvant activity as compared to each adjuvant alone. Applicants argument is not persuasive because the claims does not require such activity.

9. Claims 19-21, 24, 25, 27-32, 49-51, 54, 55, 57-62, 65, 67, 69, 60 and 73-77 remain rejected and claims 80-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiner (Weiner et al., Sept. 1997, PNAS, Vol. 94, pages 10833-10837) in view of Kensil (Kensil, 1996, Critical Reviews in Therapeutic Drug carrier Systems, Vol. 13, No. 1 and 2, pages 1-55) for reasons of record.

Weiner taught administering oligonucleotide 1758 increased the humoral immune response in a mouse (page 10834, col. 1) which has an unmethylated CpG motifs and is equivalent to SEQ ID NO:1. 1758 is phosphorothioated (page 10833, col. 2, 11 lines from the bottom) (claims 25, 26, 55, 56 and 65-68). Weiner does not teach combining 1758 with Quil A. However, at the time of filing, Kensil taught combining Quil A with other adjuvants to increase the adjuvant effect (page 6, line and page 23). Quil A is purified from *Quillaja saponaria,* is less purified than QS-7, 17, 18 or -21 and has less of an adjuvant effect than QS-7, 17, 18 or -21 (page 3, page 5, Fig. 1, page 11).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine oligonucleotide 1759 of Weiner with Quil A as taught by Kensil. One of ordinary skill in the art at the time the invention was made would have recognized that 1) both Weiner and Kensil are directed toward compositions with adjuvants that increase the immune response and 2) 1758 and Quil A could be combined because it was common for one of ordinary skill in the art at the time of filing to combine adjuvants to increase the immune response. One of ordinary skill in the art at the time the invention was made would have been motivated to combine oligonucleotide 1758 and Quil A to increase the immune response.

Applicants arguments are addressed above.

10. Claims 19-27, 49-57, 59-68 and 71-79 remain rejected and claims 80-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu (Chu et al., Nov. 17, 1997, J. Undue experimentation. Med., Vol. 186, pages 1623-1631) in view of Kensil (Kensil, 1996, Critical

Reviews in Therapeutic Drug carrier Systems, Vol. 13, No. 1 and 2, pages 1-55) for reasons of record.

Chu taught administering oligonucleotide 1826 or 1760 as an adjuvant increased the IgG2a immune response in a mouse (page 1625, col. 2, Fig. 1A and 1D). 1826 and 1760 have unmethylated CpG motifs and 1826 is equivalent to SEQ ID NO:2. 1826 and 1760 are phosphorothioated (page 1625, col. 1, Table 1) (claims 25, 26, 55, 56 and 65-68). Chu did not teach combining 1826 or 1760 with Quil A, QS-7, -17, -18 or -21. However, Kensil taught combining Quil A, QS-7, -17, -18 or -21 with other adjuvants to increase the adjuvant effect (page 6, line and page 23). Quil A is purified from *Quillaja saponaria,* and QS-7, 17, 18 and -21 are purified from a less pure formulation of saponin. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine oligonucleotides 1826 or 1760 of Chu with Quil A, QS-7, 17, 18 or -21 as taught by Kensil. One of ordinary skill in the art at the time the invention was made would have recognized that 1) both Chu and Kensil are directed toward compositions with adjuvants that increase the immune response and 2) 1826 or 1760 and Quil A, QS-7, 17, 18 or -21 could be combined because it was common for one of ordinary skill in the art at the time of filing to combine adjuvants to increase the immune response. One of ordinary skill in the art at the time the invention was made would have been motivated to add oligonucleotide 1826 or 1760 and Quil A, QS-7, 17, 18 or -21 to increase the IgG2a immune response.

Applicants have shown unexpected results with the specific combination of QS-21 and phosphorothioated oligonucleotide 1826. Applicants argument would be persuasive if the claims were limited to the combination of QS-21 and 1826. Furthermore, it is unclear whether 1760 has an equivalent adjuvant effect because the effect of nucleic acid sequences comprising unmethylated CpG motifs varies (page 9, first full paragraph of the instant application). Therefore, it is unclear whether 1760 has an equivalent adjuvant effect as 1758 or 1826. In addition, the adjuvant effect of Quil A is not equivalent to the adjuvant of QS-7, -17, -18 and -21 (Kensil, page 11, paragraphs 1 and 2). In conclusion, it is not clear that the combination of 1760 and Quil A, QS-7, 17, 18 or -21 would have the same unexpected results as 1758 or 1826 and QS-21.

Applicants argue Kensil taught combining saponin with other adjuvants but the "other adjuvants" described are not broad enough to include oligo CpGs. Applicants argument is not persuasive because Kensil does not teach oligo CpG cannot be combined with saponin or teach away from combining oligo CpGs and saponin. It cannot be determined why applicants believe one of ordinary skill would not have a reasonable expectation of success in adding oligo CpGs to saponin. Applicants argue the combination of adjuvants taught by Kensil did not increase adjuvant activity as compared to each adjuvant alone. Applicants argument is not persuasive because the claims does not require such activity.

The limitation of a CpG motif having the formula 5'$X_1CGX_2$3' in claim 57 cannot be adequately searched on computer databases because the nucleic acid is so small and may be part of a plasmid which is very large. The formula has been found in the references of record, but cannot be searched alone or in combination with saponin.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

No claim is allowed.

Inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wilson who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-0120.

Questions of formal matters can be directed to the patent analyst, Dianiece Jacobs, who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-3388.

Questions of a general nature relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

If attempts to reach the examiner, patent analyst or Group receptionist are unsuccessful, the examiner's supervisor, Deborah Clark, can be reached on (703) 305-4051.

The official fax number for this Group is (703) 308-4242.

Michael C. Wilson

MICHAEL C. WILSON
PATENT EXAMINER